What Is Claimed Is:

1. A disk drive with a voice coil motor (VCM), and a spindle motor, the disk drive comprising:

a processor configured to determine the spin-up parameters of the spindle motor based on a temperature of the VCM.

2. The disk drive of claim 1, wherein the temperature of the VCM is determined by the resistance of a coil of the VCM.

3. The disk drive of claim 1, further comprising:

a measurement circuit to measure the resistance of the coil of the VCM in order to determine the temperature of a coil of the VCM, the temperature determination being provided to the processor.

4. The disk drive of claim 1, further comprising:

a device to measure the resistance of a coil of the VCM in order to determine the temperature of the coil, the resistance measurement being provided to the processor.

5. The disk drive of claim 1, wherein the spin-up parameters comprises one or more of:

a. spin-up time;

b. spin-up current;

c. spin-up voltage; and

d. commutation time.

6. The disk drive of claim 1 wherein the spin-up parameters comprises at least one of:

a. spin-up time;

b. spin-up current;

c. spin-up voltage; and

d. commutation time.

7. The hard disk drive of claim 1, wherein the processor provides a signal to turn off the spindle motor if the spindle motor speed has not reached an operating spin-rate after a period of time, wherein the period of time is increased with a decrease in the temperature estimate.

8. A hard disk drive comprising:

a voice control motor (VCM) having a coil winding;

a spindle motor; and

a measurement circuit coupled to the VCM to measure a resistance of the VCM coil winding and provide a temperature estimate based on the measured resistance to control spin-up for the spindle motor.

9. The hard disk drive of claim 8, wherein time for the spin-up of the spindle motor to reach an operating spin-rate is increased with a decrease in the temperature estimate.

10. The hard disk drive of claim 8, wherein the spindle motor is turned off if the spindle motor speed has not reached an operating spin-rate after a period of time, wherein the period of time is increased with a decrease in the temperature estimate.

11. The hard disk dive of claim 8, wherein control of spin up for the spindle motor comprises controlling at least one of the following:

a. spin-up time;

b. spin-up current;

c. spin-up voltage; and

d. commutation time.

12. In a disk drive with a voice coil motor (VCM) and a spindle motor, the improvement comprising:

means for determining the temperature of the VCM; and

means for determining the spin-up parameters for the spindle motor based on the temperature of the VCM.

13. The disk drive of claim 12, wherein the means for determining temperature comprises a processor coupled to a coil winding of the VCM to measure resistance of the coil.

14. The disk drive of claim 12, wherein the means for determining temperature comprises a temperature measurement circuit coupled to a coil winding of the VCM to measure resistance of the coil.

15. The disk drive of claim 12, wherein the means for determining spin-up parameters comprises a spindle motor controller.

16. The disk drive of claim 12, wherein the means for determining spin-up parameters comprises a processor which provides control code to a spindle motor driver.

17. The hard disk dive of claim 12, wherein the spin-up parameters comprise at least one of the following:

a. spin-up time;

b. spin-up current;

c. spin-up voltage; and

d. commutation time.

18. The hard disk drive of claim 12, further comprising means for turning off the spindle motor if the spindle motor speed has not reached an operating spin-rate after a period of time, wherein the period of time is increased with a decrease in the temperature estimate.

19. A disk drive comprising:

a voice coil motor (VCM);

a spindle motor, and

means for determining spin-up parameters of the spindle motor based on a temperature of the VCM.

20. The disk drive of claim 19, wherein the means for determining the spin-up parameters comprises a processor coupled to a coil winding of the VCM to measure resistance of the coil to determine the temperature, the processor further being coupled to the spindle motor for controlling spin-up parameters of the spindle motor.

21. The disk drive of claim 19, wherein the means for determining the spin-up parameters comprises:

a measurement circuit coupled to a coil winding of the VCM to measure resistance of the coil to determine temperature; and

a spindle motor controller receiving the a signal from the measurement circuit and controlling spin-up parameters of the spindle motor based on the measurement circuit signal.

22. The hard disk dive of claim 19, wherein the spin-up parameters comprise at least one of the following:

a. spin-up time;

d. spin-up current;

e. spin-up voltage; and

d. commutation time.

23. The hard disk drive of claim 19, wherein the spindle motor controller is configured to turn off the spindle motor if the spindle motor speed has not reached an operating spin-rate after a period of time, wherein the period of time is increased with a decrease in the temperature estimate.

24. A disk drive comprising:

a rotatable disk;

an actuator that supports a transducer;

a voice control motor (VCM) including a coil winding configured to receive a signal to move the actuator so that the transducer is moved relative to the disk;

a spindle motor having a plurality of windings and a rotor rotatable at an operating spin-rate during an operation mode of the disk drive;

a spindle motor driver connected to apply winding currents across a combination of the spindle motor windings, and to receive a signal from the windings to enable measurement of resulting speed of the spindle motor; and

a processor coupled to the VCM to apply a signal to measure the resistance of the VCM coil winding and provide a temperature estimate based on the measured resistance, the processor further coupled to the spindle motor driver to receive the signal enabling measurement of the spindle motor speed from the spindle motor driver, the processor providing a signal to the spindle motor driver to turn off the spindle motor if the spindle motor speed has not reached the operating spin-rate after a period of time, wherein the period of time is increased with a decrease in the temperature estimate provided from the processor.

25. The disk drive of claim 24, further comprising:

a spindle motor controller coupling the processor to the spindle motor driver, wherein the spindle motor driver applies the winding currents to generate torque on the rotor to cause movement of the spindle motor, and wherein the spindle motor controller provides a signal to control a magnitude of the winding currents applied to increase the torque during startup corresponding to a decrease in the temperature estimate provided from the processor.

26. The disk drive of claim 24, further comprising:

a spindle motor controller coupling the processor to the spindle motor driver, the spindle motor controller configured to identify a sequence of commutation states and send a signal to the spindle motor driver to apply voltages across a selected combination of the windings of the spindle motor to cause the sequence of commutation states resulting in torque on the rotor to cause a desired movement of the spindle motor, wherein the spindle motor controller further provides a series of commutation clock pulses to advance the spindle motor driver between commutation states, and wherein the spindle motor controller controls timing of the commutation clock pulses to increase the torque applied during startup corresponding to a decrease in the temperature estimate provided by the processor.

27. The disk drive of claim 25, wherein the spindle motor controller is configured to identify a sequence of commutation states and send a signal to the spindle motor driver to apply voltages across a selected combination of the windings of the spindle motor to cause the sequence of commutation states resulting in torque on the rotor to cause a desired movement of the spindle motor, wherein the spindle motor controller further provides a series of commutation clock pulses to advance the spindle motor driver between commutation states, and wherein the spindle motor controller controls timing of the commutation clock pulses to increase the torque applied during startup corresponding to a decrease in the temperature estimate provided by the processor.

28. The disk drive of claim 24, wherein the signal applied to measure the resistance of the VCM coil winding is a set voltage, and the resistance is determined from the resulting current received from the VCM coil winding.

29. The disk drive of claim 24, wherein the signal applied to measure the resistance of the VCM coil winding is a set current, and the resistance is determined from the resulting voltage across the VCM coil winding.

30. The disk drive of claim 24, further comprising a memory connected with the processor, wherein processor readable code is stored in the memory the code

being readable to cause the processor to apply the signal to measure the resistance of the VCM coil winding during startup, and to determine the temperature from a table of values stored in the memory with temperature corresponding to measured resistance.

31. The disk drive of claim 24, further comprising a memory connected with the processor, wherein processor readable code is stored in the memory the code being readable to causing the processor to apply the signal to measure the resistance of the VCM coil winding during startup, and to determine the temperature based on a calculation using the measured resistance.

32. A disk drive comprising:

a rotatable disk;

a transducer;

an actuator that supports the transducer;

a voice control motor (VCM) connected to the actuator, the VCM including a coil winding configured to receive a signal to move the actuator so that the transducer is moved relative to the disk;

a processor coupled to the VCM to apply a signal to measure the resistance of the VCM coil winding, and to provide a temperature estimate based on the measured resistance;

a spindle motor having a plurality of windings and a rotor rotatable at an operating spin-rate during an operation mode of the disk drive;

a spindle motor driver connected to apply winding currents across a combination of the spindle motor windings; and

a spindle motor controller coupling the processor to the spindle motor driver, wherein the spindle motor driver applies the winding currents to generate torque on the rotor to cause movement of the spindle motor, and wherein the spindle motor controller provides a signal to control a magnitude of the winding voltages applied to increase the torque applied during startup corresponding to a decrease in the temperature estimate provided from the processor.

33. The disk drive of claim 32, wherein the spindle motor controller is configured to identify a sequence of commutation states and send a signal to the spindle motor driver to apply voltages across a selected combination of the windings of the spindle motor to cause the sequence of commutation states resulting in torque on the rotor to cause a desired movement of the spindle motor, wherein the spindle motor controller further provides a series of commutation clock pulses to advance the spindle motor driver between commutation states, and wherein the spindle motor controller controls timing of the commutation clock pulses to increase the torque applied during startup corresponding to a decrease in the temperature estimate provided by the processor.

34. A disk drive comprising:

a rotatable disk;

a transducer;

an actuator that supports the transducer;

a voice control motor (VCM) connected to the actuator, the VCM including a coil winding configured to receive a signal to move the actuator so that the transducer is moved relative to the disk;

a processor coupled to the VCM to apply a signal to measure the resistance of the VCM coil winding, and to provide a temperature estimate based on the measured resistance;

a spindle motor having a plurality of windings and a rotor rotatable at an operating spin-rate during an operation mode of the disk drive;

a spindle motor driver connected to apply winding voltages across a combination of the spindle motor windings; and

a spindle motor controller coupling the processor to the spindle motor driver, the spindle motor controller configured to identify a sequence of commutation states and send a signal to the spindle motor driver to apply voltages across a selected combination of the windings of the spindle motor to cause the sequence of commutation states resulting in torque on the rotor to cause a desired movement of the spindle motor, wherein the spindle motor controller further

provides a series of commutation clock pulses to advance the spindle motor driver between commutation states, and wherein the spindle motor controller controls timing of the commutation clock pulses to increase the torque applied during startup corresponding to a decrease in the temperature estimate provided by the processor.

35. A disk drive comprising:

a rotatable disk;

a transducer;

an actuator that supports the transducer;

a voice control motor (VCM) connected to the actuator, the VCM including a coil winding configured to receive a signal to move the actuator so that the transducer is moved relative to the disk;

a processor coupled to the VCM to apply a signal to measure the resistance of the VCM coil winding, and to provide a temperature estimate based on the measured resistance;

a spindle motor having a plurality of coil windings and a rotor rotatable at an operating spin-rate during an operation mode of the disk drive; and

a spindle motor control means for receiving the temperature estimate from the processor and for providing a signal to the coil windings to control operation of the spindle motor during startup based on the temperature estimate.